

Case Study: Balancing a Heavy Workload I

(from a 2007 MIT mentoring experience)

“This summer has proven to be very busy for me, and I am concerned that I am not paying as much attention to my mentee as I would like to. Currently, I’m working on writing a paper, preparing for a research-related trip, working on a few projects separate from my undergraduate’s work, and mentoring my undergraduate. Needless to say, there are days that I feel like I am neglecting my student or giving him menial tasks to do that I need done. I am not sure how to balance my time spent helping my students and working on my other projects, which all require large pieces of time and a lot of attention.”

Case Study: Balancing a Heavy Workload II

(from a 2008 MIT mentoring experience)

“Although my undergraduate mentee is a hard worker and a bright and enthusiastic student, I find that I spend several hours each day helping her with her research project. This time commitment is necessary because of the nature of her project (assigned by our research advisor), including performing some complicated techniques and working on several different instruments. Our advisor has very high expectations for what we graduate students accomplish each week and does not seem to take into consideration the time that is spent training and teaching undergraduates. At the same time, it is expected that the undergraduates in our lab receive excellent training and produce results as well. I worry that my advisor perceives that I am not putting sufficient work into my research, even though I am putting in more hours than ever before between my mentee’s and my own projects. I wonder how I can better balance my own research demands with those of my mentee’s.

Case Study: Balancing Guidance and Independence I

(from a 2008 MIT mentoring experience)

As my mentee became more familiar with the lab and techniques we would be using over the course of her program, I wanted to give her more independence to decide what and how much she would do in a given day, and how she would do it. However she began to make simple mistakes and had to repeat several things she had done incorrectly. Making such mistakes is a good learning process, but I was afraid that she was getting frustrated or thinking I was abandoning her. Also, as the program is so short, I was conflicted as to whether I should mentor her more closely as I had done in the beginning, or continue to give her more independence.

Case Study: Balancing Guidance and Independence II

(from a 2008 MIT mentoring experience)

“My undergraduate started the summer program with very little previous research experience. She is still in her early years of college, so she lacks some of the basic background required to fully understand the research she is working on. However, she is sincere and hardworking and grasps new research techniques quickly, so she is having a productive summer and learning a lot. My current concern is that she still needs to be more inquisitive and not take everything for granted as told to her by senior members of the lab. I want her to start out with good research habits, which includes critical thinking, but I don’t want to overwhelm her, since I can tell she is still somewhat intimidated by the serious research environment at MIT. Are there things I can be doing to help her think more independently without overwhelming her? Am I expecting too much from her so early in her research career?”

Case Study: Attitude and Effort 1

(from a 2007 MIT mentoring experience)

“My case study comes from an experience with a previous UROP. This student had no lab experience outside of her coursework, so I knew that I was starting from scratch with her. I thought the best way to introduce her to biochemistry would be to have

her start with cloning, recombinant expression and purification of interesting proteins. Every new technique that she used, I would demonstrate or do with her once, then allow her to do things on her own to encourage independence, encouraging her to ask questions. The problem was that she never did ask questions, but also that she never paid attention during demos. As a result, she overheated gels by running them in the incorrect buffer, broke a Pipetman by using it wrong despite insisting that she knew how, dialyzed proteins against tap water and more. She never opened up to ask questions, and I didn't have the time to supervise her every step. When she told our professor in a meeting that she found the repetitive work "boring", I decided that her attitude was as bad as her lab work. She wrote an outline for me, after 6 months of work, describing what she had done, and the incoherence of her outline made it clear that she had not learned a thing. I wound up asking her to leave the lab.

I still feel terrible about this experience. My goal had been to teach this young girl about basic biochemistry and maybe get her excited about it, but her reticence from the beginning, and her carelessness, made it impossible. I wonder if there was some other way to have reached her at any point during her time in the lab."

Case Study: Attitude and Effort 2

(from a 2007 MIT mentoring experience)

"My mentee has become sloppy with his work. Although he has performed the same protocols several times, he still forgets what he is supposed to do. After completion of one step, he forgets that the next step should be. As a result of not thinking through the whole process and not remembering the big picture, he continually makes errors and has to restart. On several occasions, I have gone back to check his work without him knowing, finding several mistakes. When I confront him, he brushes it off and starts again. Even worse, he is getting bored of performing the same tasks repeatedly, as many of his experiments haven't been working. Because of this, I have tried to repeat certain steps myself, and gotten things to work. Therefore, his obvious lack of focus has caused his experiments to fail, and he has thus become increasingly disinterested in his work.

Case Study: Attitude and Effort 3

(from a 2008 MIT mentoring experience)

“My case study comes from a previous experience with a mentee. During his time in our lab, I was mostly satisfied with his effort and the abilities in performing laboratory work, but I always had the feeling that he was not particularly interested in the project we were working on or in the techniques we carry out in the lab. He did everything that I asked of him reasonably well, and asked questions when he needed clarification on a technique. However, he never showed enthusiasm or took extra initiative in his work. During his time in our lab, I directed him to relevant papers, discussed the big picture goals of the project, and asked him about his own goals and interests to try to spark his passion for the research, but none of that seemed to have an effect one way or the other. Overall, it was a disappointing experience for me, and seemingly for him as well. In retrospect, I wonder if I was expecting too much or if there was some other approach I should have been taking.”

Case Study: Dealing with Student Stress

(from a 2007 MIT mentoring experience)

As a graduate student, I worked with a talented undergraduate for three years, a mentorship that ended with the student’s graduation. Early in our professional relationship I realized that she was extremely reserved emotionally, and hesitant to speak her mind. As her time in the lab stretched on, she became more and more skilled at her research and eventually produced a significant amount of high quality results that led to her inclusion on a publication. Despite her scientific growth, however, she remained in her shell and rarely spoke her mind, even when directly asked her feelings or opinion. I had made an effort from the beginning to encourage her to express herself, and tried to create the most comfortable working environment for her to do so, so her hesitation to

open up became frustrating to me because of the resulting lack of feedback from her regarding our progress, my teaching, and her overall experience.

Eventually, while on a synchrotron run, she informed me that she was recovering from anorexia in high school, and furthermore, had a difficult time dealing with it during parts of her tenure in the lab. After learning this, I thought there might be a relationship between it and her hesitation to speak her mind and concurrently feared placing any level of pressure on her to perform in the lab, because I did not want to exacerbate her problem. Toward the end of her time as my UROP student she finally expressed herself about the project as a whole—that she was unhappy with the fact that it did not relate directly to human health and the level of progress that she had reached during her tenure. At that point it was too late for me to do much to help this situation, and I feel when she left the lab we were both disappointed with her overall UROP experience. If she had spoken her mind earlier then I would have been able to modify her project to better fit her interests, and similarly if I had overlooked my fear of exacerbating her health issues and put more pressure on her to perform she may have accomplished more.